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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,497	03/07/2002	Tetsuo Fujii	01-018-DIV	1608

23400 7590 04/23/2003

POSZ & BETHARDS, PLC
11250 ROGER BACON DRIVE
SUITE 10
RESTON, VA 20190

EXAMINER

GREENE, PERSHELLE L

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,497

Applicant(s)

FUJII ET AL.

Examiner

Pershelle Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 07 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 21-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 21-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

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Serial Number: 10/091497

Attorney's Docket #: 01-018-DIV

Filing Date: 03/07/2002

Applicant: Fujii et al.

Examiner: Pershelle Greene

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 21-40 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshihara et al. (U.S. Patent # 6,255,741), in view of Yoshihara et al. (U.S. Patent # 6,245,593).

In claim 21, Yoshihara (741) shows, in figure 9, a semiconductor chip 100. There is a protective member 2 disposed on the surface of the semiconductor chip. The protective member has an opening portion from which an electrical connection can be exposed. There is a movable portion 100a disposed on a region that is covered by the protective member. Yoshihara et al. (741) fails to explicitly show a bump being disposed in the opening of the protective member.

Yoshihara et al. (593) is cited for showing a semiconductor device with flat protective adhesive sheet. Specifically, Yoshihara et al. (593) shows, referring to figure 15B, a bump disposed on the surface of the semiconductor chip.

It would have been obvious to one of ordinary skill in the art to use the bump of Yoshihara (593) with the device of Yoshihara et al. (741) for the purpose of providing a different type of electrical connection for soldering to the surface another element.

As to claims 22-29, Yoshihara et al. (741) shows, referring to figure 9, a movable portion 100a having a movable electrode detecting change of a capacity. The movable electrode 100a provides a capacity detection type acceleration sensor. The movable portion, which is disposed in an opening portion on the semiconductor chip 100, faces the protective member that is formed to provide a space for preventing contact with the movable portion. The movable portion is disposed in the chip 100 close to the surface where the protective member is disposed. The protective member has a recess that corresponds to the movable portion. The opening portion in the semiconductor chip 100 includes a back surface processed portion and an adhesive film 102 disposed on the semiconductor chip 100 so as to cover an opening defined by the back surface processed portion.

As to claim 30, it would have been obvious to use two bumps since there are two openings disposed on both sides of the surface of the chip 100 with respect to the movable portion for electrical connections.

As to claim 40, the bum is disposed on another region different than the opening portion in which the movable portion is disposed.

As to claim 31, Yoshihara et al. (741) shows, referring to figure 9, a semiconductor chip 100 having a first and second plane surfaces . The chip defines a portion that opens to the first plane surface and has a movable portion 100a disposed in the opening portion. There is a pad

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portion 100b formed on the first plane. A protective member is disposed on the first surface so as to cover the opening portion and to expose the pad portion.

As to claim 32, Yoshihara et al. (593) is cited for showing a semiconductor device with flat protective adhesive sheet. Specifically, Yoshihara et al. (593) shows, referring to figure 15B, a bump disposed on the surface of the semiconductor chip.

It would have been obvious to one of ordinary skill in the art to use the bump of Yoshihara (593) with the device of Yoshihara et al. (741) for the purpose of providing a different type of electrical connection for soldering to the surface another element.

As to claims 33-38, Yoshihara et al. (741) shows, referring to figure 9, the movable electrode 100a providing a capacity detection type acceleration sensor. The protective member is formed to provide a space for preventing contact with the movable portion. Referring to figure 10C, you see that a cap portion can be used. Figure 9 shows a recess corresponding to the movable portion. The opening portion in the chip 100 includes a back surface processed portion that opens to the second plane surface of the chip and further comprising an adhesive film 102 disposed on the second plane surface of the chip so as to over an opening defined by the back surface processed portion. The movable portion is disposed in the chip close to the first plane surface.

As to claim 39, the first plane surface on which the pad portion is formed is different from the opening in which the movable portion is disposed.

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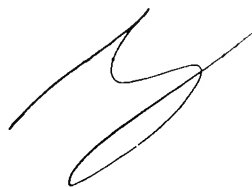
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pershelle Greene whose telephone number is 703-305-3870. The examiner can normally be reached on M-F 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on 703-308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PLG
April 17, 2003

A handwritten signature in black ink, consisting of a stylized, cursive 'P' followed by a 'G'.